

REMARKS

Claims 1-6 are all the claims pending in the application.

Claims 1-6 have been amended in order to remove the rejection under 35 U.S.C. § 112, 2nd paragraph, and to clarify the present invention. Applicants have made a minor correction to the specification.

Specifically, in claim 1, the Examiner objects to the language “coil portions...symmetrical with respect to a mechanical angle of 360 degrees” as being indefinite. This language has been changed to --coil portions...magnetically symmetrical different slots--. For instance, in the case that the number of magnetic poles is 4, two coil portions are disposed at an angle of 180 degrees in terms of mechanical angle (see lines 9-13 on page 10 of the original specification “That is, the upper-side coil portion...terms of a mechanical angle.”). If the number of magnetic poles is 6, three coil portions are disposed at angles of 120 degrees in terms of mechanical angle (see lines 2-6 on page 14 of the original specification “For instance,...a mechanical angle.”). Claim 4 has also been amended in order to remove a 35 U.S.C. § 112, 2nd paragraph objection. The claims are now believed to be definite.

Reconsideration and removal of the rejection of claims 1 and 3-6, under 35 U.S.C. § 102(a/e) as anticipated by Tanaka et al. (U.S. Patent No. 6,043,581) are respectfully requested on the basis of the present amendment to the claims and the following remarks.

The winding 6 in Fig. 13 of Tanaka is composed of forty-four coil portions 14 formed by winding single coil portions 14, which are formed by winding a wire 5, for example, ten turns,

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and offsetting each new coil portion one slot at a time until two laps have been made. Tanaka does not disclose the subject matter of this application that the coil portions are disposed in magnetically symmetrical different slots. It is respectfully submitted that claim 1 is not anticipated by, or obvious over, Tanaka.

Amended claim 1 patentably distinguishes over the Tanaka reference for the reason above. Dependent claims 2-6, due to dependency, also patentably distinguish over Tanaka for at least the reason that their base claim 1 patentably distinguishes over the cited art. Therefore, for the same reasons that independent claim 1 is not anticipated by, nor obvious over, Tanaka, claims 2-6, which depend from claim 1, are not obvious over Tanaka.

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

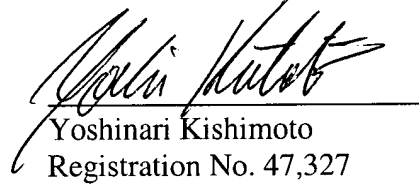
Attached hereto is a version with markings to show changes made.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

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Respectfully submitted,



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APPENDIX

VERSION WITH MARKINGS TO SHOW CHANGES MADE

IN THE DRAWINGS:

Attached hereto is a Submission of Drawings along with six (6) sheets of drawings (Figs. 7-12).

IN THE SPECIFICATION:

The specification is changed as follows:

Page 2, paragraph 2:

As shown in FIGS. 78-9, the motor 100 for use in an electric power steering system has twenty-two teeth 113, twenty-two segments 112, and four magnetic poles 102. For easy understanding of the connection relation between the coil portions 114 and the segments 112, this figure shows such an arrangement throughout a range longer than an actual range, that is, a range of more 360 degrees (720 degrees in this case) in terms of a mechanical angle.

Page 7, paragraph 7, which bridges over to page 8:

This motor 1 for use in an electric power steering system has a cylindrical yoke 101, magnetic poles 102 constituted by permanent magnets, the number of which is 4, and fixed in this yoke 101, a shaft 104 provided in the yoke 101 in such a manner as to be enabled by a bearing 103 to freely rotate, an armature 2105 fixed to this shaft 104, a commutator 106 fixed to an end portion of the shaft 104, brushes 108 made by elastic forces of springs (not shown) to

abut against the surface of this commutator 106 and held by brush holders 107, and equalizers 200 electrically connecting the segments 112 that are to be at equal electric potential.

IN THE CLAIMS:

The claims are amended as follows:

1. (Amended) A dynamo-electric machine comprising:

a yoke;

magnetic poles fixed in said yoke;

a shaft rotatably provided in said yoke;

an armature having a winding consisting of a plurality of coil portions each formed by lap-winding a conductor between a corresponding pair of slots formed in an outer circumferential surface portion of a core fixed to said shaft in such a way as to extend in an axial direction thereof;

a commutator fixed to an end portion of said shaft and having a plurality of segments to which both end sections of said coil portions are electrically connected;

brushes made to respectively abut against the surfaces of said segments of said commutator; and

equalizers for connecting said segments, which are to be at equal electric potential, to each other,

wherein n (~~incidentally, "n" is a common divisor of the number of the magnetic poles and the number of the slots and equal to or more than 2~~) of said coil portions are parallel-connected between said segments

where n is a common divisor of the number of the magnetic poles and the number of the slots and equal to or more than 2, and

wherein said coil portions are disposed in magnetically symmetrical different ~~slotssuch a manner as to be symmetrical with respect to a mechanical angle of 360 degrees.~~

2. (Amended) A~~The~~ dynamo-electric machine according to claim 1, wherein each of said coil portions comprises a plurality of small coil portions parallel-connected to one another.

3. (Amended) A~~The~~ dynamo-electric machine according to claim 1, wherein the number of the slots and the number of the segments are 22, wherein the number of poles is 4, and wherein two of the coil portions are parallel-connected between each pair of said segments.

4. (Amended) A~~The~~ dynamo-electric machine according to claim 1, wherein said conductor and said equalizer are constituted by members made of a same material, and wherein said winding ~~and is connected to said equalizers are continuously connected to each other.~~

5. (Amended) A~~The~~ dynamo-electric machine according to claim 1, wherein said conductor is an enamel-coated round wire.

6. (Amended) A~~The~~ dynamo-electric machine according to claim 1, which is a motor for use in an electric power steering system.